

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number

Q90456

Mail Stop AF
Commissioner for Patents
P.O. Box 1450 Alexandria, VA 22313-1450

Application Number

10/553,976

Filed

October 20, 2005

First Named Inventor

Hiroyuki TANAKA

Art Unit

1796

Examiner

Henry S HU

WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal

The review is requested for the reasons(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

☒ I am an attorney or agent of record.

Registration number 33,276



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July 22, 2009

Date

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No: Q90456

Hiroyuki TANAKA, et al.

Appln. No.: 10/553,976

Group Art Unit: 1796

Confirmation No.: 8235

Examiner: Henry S HU

Filed: October 20, 2005

For: FLUORINE CONTAINING ELASTOMER COMPOSITION EXCELLENT IN PLASMA
ANTIAGING EFFECT AND MOLDED ARTICLE THEREOF

PRE-APPEAL BRIEF REQUEST FOR REVIEW

MAIL STOP AF - PATENTS

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

In response to the final Office Action dated April 22, 2009, Appellants file this Pre-Appeal Brief Request for Review and accompanying Notice of Appeal.

Claims 1, 3 and 6-9 were rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,642,300 to Kawaguchi et al, JP 2002-161264 to Masaki et al (JP '264), EP 0 432 911 A1 to Goebel (EP '911) or JP 5-279535 to Michio et al (JP '535) in combination or alone in view of U.S. Patent No. 6,870,662 to Tseng et al.

Each of Kawaguchi et al, JP '264, EP '911 and JP '535 was cited as disclosing vulcanizable fluoropolymer compositions suitable for making seals, gaskets, etc., and designed for plasma-resistance and/or heat aging-resistance. The Examiner cited Tseng et al as disclosing addition of a pigment within the scope of present claim 1 to various polymer compositions so as to improve plasma resistance "due to the generation of positively charged polymer and negatively charged pigment particles," citing the Abstract and col. 2, lines 1-3.

Appellants disagree, and believe that the present claims are patentable over the cited prior art for the following reasons.

The present invention is directed to a fluorine containing elastomer composition for a seal material of a semiconductor production device comprising a fluorine-containing elastomer and a specific compound having plasma antiaging effects.

On the other hand, Tseng et al relates to a method of surface modification of an electrophoretic display cell surface, which may include plasma treatment of the subject surface (column 2, lines 19-21). More particularly, Tseng et al relates to an electrophoretic display cell or microcup (made from a thermoplastic or thermoset precursor, for example, a crosslinked and molded oligomer, as described bridging columns 3-4) that is filled with charged pigment particles dispersed in a dielectric solvent (column 4, lines 30-31).

Because the claims do not specify how the pigment is dispersed within the fluoroelastomer, the Examiner was of the view that the claims cover pigment incorporated into the fluoroelastomer by surface-coating or surface-penetration. The Examiner maintained that at least some of the pigment used to modify the electrophoretic display cell surface (i.e., the charged pigment particles dispersed in a dielectric solvent and filling the microcup) will stay with and/or on the surface of the microcup (of the fluoroelastomer).

However, this is not a disclosure of an elastomer composition containing a charged pigment particle. Rather, as noted above, it is the crosslinked and molded microcup that is filled with charged pigment particles dispersed in a dielectric solvent. Furthermore, Tseng et al (col. 2, lines 32-41) does not disclose improved plasma resistance by incorporating a pigment particle into an elastomer composition. Rather, the cited passage of Tseng et al describes that by treating the microcup surface with plasma, the resulting display cell may exhibit certain advantageous

characteristics. Further, as for the material constituting the microcup, the disclosure bridging cols. 3-4 does not mention a fluorine-containing elastomer composition.

That is, Tseng et al relates to the field of “microcup” entirely different from that of the present invention, and there is no disclosure of a fluorine-containing elastomer composition comprising a fluorine-containing elastomer and the specific compound of the invention having plasma anti-aging effects.

Appellants further comment as follows.

Tseng et al bridging cols. 4-5 discloses that the suspending medium may be colored by dyes such as an anthraquinone dye. However, this disclosure has nothing to do with the thermoplastic or thermoset precursor used for preparation of the microcups (col. 3, line 65 - col. 4, line 1). Of course, Tseng et al does not associate the dyes disclosed bridging cols. 4-5 with a plasma antiaging effect. In fact, Tseng et al is entirely silent as to plasma antiaging effect.

Therefore, even if one skilled in the art were to attempt to combine Tseng et al with any of the four primary references, there is no apparent reason which would lead one of ordinary skill to select specific pigments having a plasma antiaging effect from the dyes and pigments disclosed by Tseng et al (which, as noted above, are used to color the suspending medium and not the material of the microcup) and to incorporate them into a fluorine-containing elastomer of the primary references.

Appellants further address specific issues raised by the Examiner in the final rejection as follows.

The Office Action states that “According to Tseng’s disclosure, the polymer composition can be readily colored by a solution of dyes or pigments such as anthraquinone dyes, quinacridone dyes and the like pigments. By doing so, the plasma resistance is found to

improve due to the generation of positively charged polymer and negatively charged pigment particles (see Abstract, line 1-3; col. 2, lines 23-41).” (page 5, lines 9-12).

However, the exact description of Tseng et al is “...the plasma treatment is performed to induce surface charge on the microcup surface to modulate its interaction with the charged pigment particles.” (col. 2, lines 25-28). Namely, according to Tseng et al, the plasma treatment is performed to improve affinity to pigment particles (col. 7, lines 22-24), but not to improve plasma resistance. Of course, there is no disclosure in Tseng et al as to plasma resistance of a fluorine-containing elastomer.

According to the present invention, the fluorine-containing elastomer is endowed with plasma resistance and an antiaging effect by incorporating specific compounds into the elastomer composition. More particularly, specific pigments are added to the fluorine-containing elastomer composition to effectively capture radicals derived from plasma radiation and to inhibit deterioration caused by scission of polymer main chains by radical chains (page 29, lines 18-22 of the specification).

Tseng et al does not teach the capturing of radicals in the fluorine-containing elastomer induced by plasma radiation, but rather teaches inducing surface charge for ready coloring.

Thus, Appellants do not understand how and why one of ordinary skill could arrive at the fluorine-containing elastomer composition of the invention including a specific compound having plasma antiaging effects from the disclosure of Tseng et al.

Further, as discussed above, Tseng et al discloses numerous pigments and dyes which can be charged by plasma treatment for ready coloring. However, there is no apparent reason which would lead one of ordinary skill to select the specific pigments as claimed in present claim 1 in

order to impart an anti-aging effect to the fluorine-containing elastomer of any of the secondary references from among the numerous compounds disclosed by Tseng et al.

Accordingly, Appellants respectfully request withdrawal of the final rejection under 35 U.S.C. § 103(a) upon review of the Pre-Appeal Panel.

Claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Kawaguchi et al, JP '264, EP '911 or JP '535 in combination or alone in view of Tseng et al and further in view of U.S. Patent No. 7,323,515 to Hayashida et al. Hayashida et al was cited as disclosing a seal product having a reduced metallic atom content.

Appellants rely on the response above with respect to the rejection of claims 1, 3 and 6-9.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayment to said deposit account.

Respectfully submitted,



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